Principal facts for gravity stations in the Sierra Ancha Wilderness, Salome Study Area, Gila County, Arizona

by

Dolores M. Wilson and Viki Bankey

U.S. Geological Survey

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Complete Bouguer Gravity Map of the Sierra Ancha Wilderness, Salome Study Area, Gila County, Arizona

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Introduction

A gravity study was made of the Sierra Ancha Wilderness, Salome Study Area (fig. 1) as part of the mineral resource assessment of the area. The gravity data provide information on geologic structural relationships and the subsurface distribution of different rock types. This report presents the principal facts of the gravity survey.

Data Collection

The gravity survey was made during the spring of 1978, and was supplemented by data collected in the spring of 1979 and the winter of 1980. A total of 193 stations were established using LaCoste-Romberg and Worden gravimeters[1], and were tied to the International Gravity Standardization Net 1971 (Defense Mapping Agency Aerospace Center, 1974) at base stations ACIC 3210-1 at Globe, Ariz., and ACIC 3203-1 at Payson, Ariz. Secondary base stations were established at Roosevelt Lake Resort, Roosevelt, Ariz.; Kohl's Ranch, Payson, Ariz.; and Mountain Shadows Leisure Villa, Payson, Ariz. Descriptions of the base stations are included at the end of this paper.

Station elevations were obtained variously from benchmarks, spot elevations, and estimations from topographic maps at 1:24,000 and 1:62,500

[1]Use of brand names in this report is for descriptive purposes only and does not constitute endorsement by the U.S. Geological Survey.

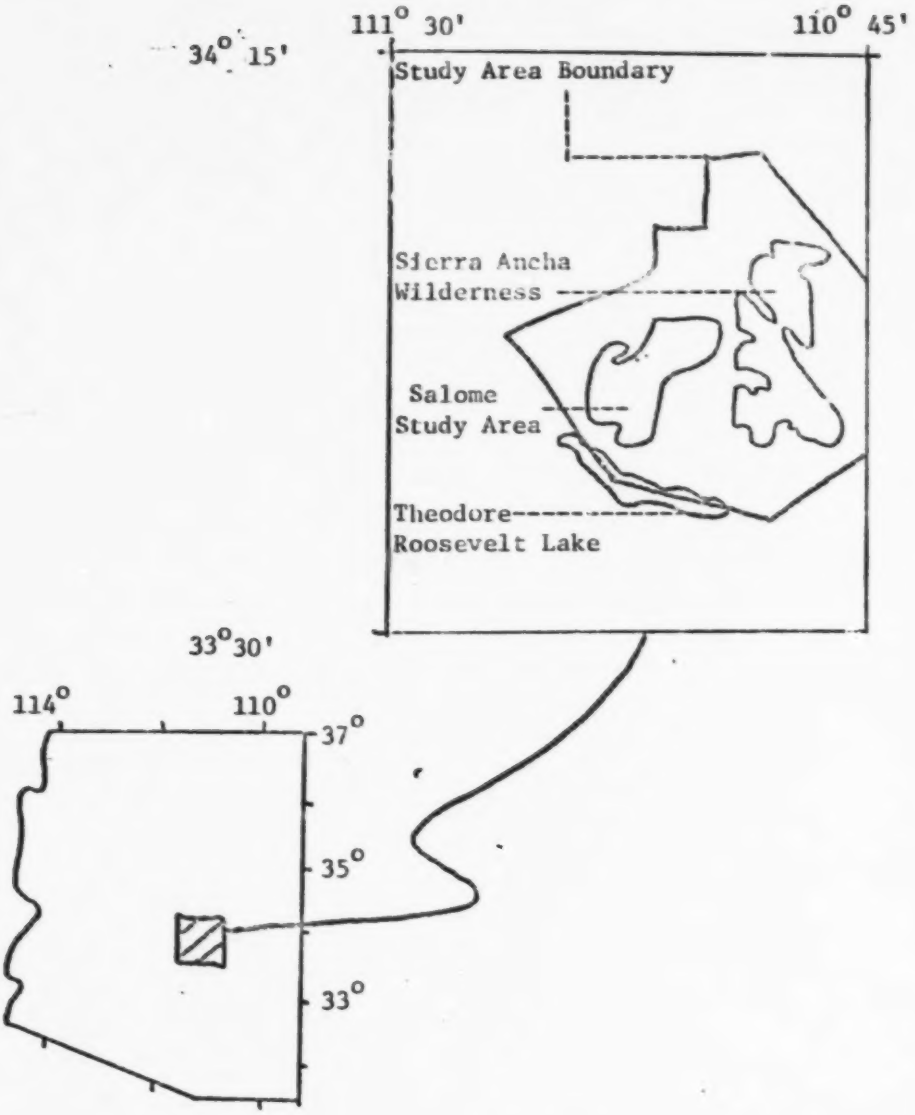


Figure 1. Area of gravity survey in Sierra Ancha Wilderness, Salome Study Area, and vicinity, Gila County, Ariz.

scales. The estimated elevations are accurate to 1-2 m in areas of low relief, but may be in error by 5-10 m in more rugged terrain. The resultant error in the Bouguer anomaly is less than 2 mgal.

Data Preparation

The gravity data were reduced using a digital computer program, written by R. H. Godson and D. A. Dansereau of the U.S. Geological Survey (unpub.), which incorporates corrections for linear instrument drift and for the effects of tide, terrain, and earth curvature. Gravity meter readings were converted to observed gravity using the 1971 values of the International Gravity Standardization Net. The Geodetic Reference System 1967 formula (International Association of Geodesy, 1967) was used to compute theoretical gravity. The data were reduced to Bouguer anomaly values using an assumed average rock density of 2.67 gm/cm^3 (table 1). Data are also included in table 1 for reduction at an assumed average rock density of 2.45 gm/cm^3.

Terrain corrections were made on the basis of mean elevation data digitized according to the following standards:

0-5 km: 15-second grid spacing on 1:62,500 USGS topographic maps;

5-21 km: 1-minute grid spacing on 1:250,000 USGS topographic maps;

21-166.7 km: 3-minute grid spacing on 1:250,000 USGS topographic maps.

Curvature corrections were made from 14 km to 167 km.

The principal facts for the gravity data are listed in table 1.

Explanations of headings on table 1:

Station identification	
proj.	Project name.
sta. id.	Gravity station number.
Locations	
Latitude	North latitude in degrees, minutes, and hundredths of minutes.
Longitude	West longitude in degrees, minutes, and hundredths of minutes.
Ele	Station elevation.
St	State where station is located.
Gravity	
Observed	Observed gravity in milligals.
Theoretical	Theoretical gravity.
Corrections	
Terrain	Terrain correction in milligals.
Bouguer	Bouguer correction.
Curv	Curvature correction in milligals.
Special	Not used.
Anomalies	
Free air	Free-air anomaly in milligals.
Complete Bouguer	Complete Bouguer anomaly in milligals for assumed average density of 2.45 g/cm^3 and 2.67 g/cm^3.

Table 1.--Principal facts for gravity stations in the Sierra Ancha Wilderness, Salome Study Area, and vicinity, Gila County, Ariz.

STATION IDENTIFICATION proj	sta-id	LOCATIONS LATITUDE deg	min	LONGITUDE deg	min	ELE (in ft)	ST	GRAVITY OBSERVED	THEURETICAL	CORRECTIONS TERRAIN	BOUGUER	CURV	SPECIAL	ANOMALIES FREE AIR	COMPLETE-BOUGUER d1=2.45	d2=2.67
north :	s001	33	35.75	-110	56.50	2569.0	az	979300.93	979614.77	2.14	-80.40	-0.85	0.00	-72.21	-151.32	-158.43
north :	s002	33	37.15	-110	55.30	2196.0	az	979325.09	979616.71	3.59	-68.73	-0.75	0.00	-85.06	-150.96	-156.88
north :	s003	33	38.59	-110	57.05	2263.0	az	979316.60	979618.71	1.43	-70.82	-0.77	0.00	-89.26	-159.42	-165.72
north :	s004	33	39.57	-110	55.50	2634.0	az	979297.58	979620.07	1.48	-82.44	-0.87	0.00	-74.75	-156.58	-163.93
north :	s005	33	40.39	-110	55.38	2724.0	az	979297.22	979621.21	2.46	-85.25	-0.89	0.00	-67.79	-151.47	-158.99
north :	s006	33	40.57	-110	54.22	3282.0	az	979266.67	979621.46	1.89	-102.72	-1.02	0.00	-46.12	-148.38	-157.56
north :	s007	33	40.91	-110	52.95	3030.0	az	979280.46	979621.93	1.42	-94.83	-0.96	0.00	-56.50	-150.87	-159.34
north :	s008	33	40.91	-110	51.25	2704.0	az	979299.55	979621.93	1.79	-84.63	-0.89	0.00	-68.06	-151.79	-159.31
north :	s009	33	41.93	-110	50.50	2804.0	az	979295.75	979623.35	2.03	-87.76	-0.91	0.00	-63.87	-150.51	-158.29
north :	s010	33	42.72	-110	49.20	2713.0	az	979301.25	979624.45	2.42	-84.91	-0.89	0.00	-68.03	-151.41	-158.89
north :	s011	33	43.93	-110	48.45	2766.0	az	979299.93	979626.13	2.11	-86.57	-0.90	0.00	-66.05	-151.41	-159.07
north :	s012	33	46.15	-110	48.98	2867.0	az	979291.92	979629.22	3.50	-89.73	-0.93	0.00	-67.65	-154.81	-162.63
north :	s013	33	48.25	-110	50.49	3020.0	az	979277.79	979632.14	10.57	-94.52	-0.96	0.00	-70.32	-155.23	-162.85
north :	s014	33	42.74	-110	58.65	2929.0	az	979290.82	979624.48	2.15	-91.67	-0.94	0.00	-58.18	-148.64	-156.76
north :	s015	33	42.58	-111	0.45	2714.0	az	979303.62	979624.26	1.65	-84.94	-0.89	0.00	-65.37	-149.55	-157.11
north :	s016	33	41.16	-111	0.83	2300.0	az	979325.47	979622.28	1.75	-71.98	-0.78	0.00	-80.48	-151.49	-157.87
north :	s017	33	44.44	-110	57.67	4018.0	az	979225.40	979626.84	3.95	-125.75	-1.16	0.00	-23.57	-146.52	-157.56
north :	s019	33	47.81	-110	58.10	5079.0	az	979160.34	979631.53	7.07	-158.96	-1.30	0.00	6.43	-146.75	-160.51
north :	s020	33	48.80	-110	58.60	5961.0	az	979110.94	979632.91	5.12	-186.56	-1.37	0.00	38.55	-144.26	-160.68
north :	s021	33	50.00	-110	58.67	5391.0	az	979137.06	979634.58	4.73	-168.72	-1.33	0.00	9.43	-155.98	-170.75
north :	s022	33	50.78	-110	58.03	5404.0	az	979143.82	979635.66	4.70	-169.13	-1.33	0.00	16.32	-149.44	-164.33
north :	s023	33	51.81	-110	58.32	5444.0	az	979142.45	979637.10	3.39	-170.38	-1.34	0.00	17.28	-151.05	-166.17
north :	s024	33	53.35	-110	57.92	5612.0	az	979133.72	979639.25	3.82	-175.64	-1.35	0.00	22.19	-150.98	-166.53
north :	s025	33	54.33	-110	57.14	6342.0	az	979086.79	979640.62	4.16	-198.48	-1.39	0.00	42.50	-153.21	-170.78
north :	s026	33	55.00	-110	57.06	6112.0	az	979101.43	979641.55	3.24	-191.29	-1.38	0.00	34.59	-154.83	-171.84
north :	s027	33	56.73	-110	57.84	6412.0	az	979085.32	979643.96	4.25	-200.68	-1.39	0.00	44.27	-153.55	-171.31
north :	s028	33	57.65	-110	57.26	6187.0	az	979099.81	979645.25	4.58	-193.63	-1.38	0.00	36.33	-154.11	-171.21
north :	s029	34	0.07	-110	57.50	6227.0	az	979101.14	979648.63	2.94	-194.89	-1.38	0.00	38.04	-155.29	-172.65
north :	s030	34	1.30	-110	57.83	6301.0	az	979097.52	979650.34	3.35	-197.20	-1.38	0.00	39.66	-155.58	-173.11
north :	s031	34	2.74	-110	58.19	6039.0	az	979112.06	979652.35	1.98	-189.00	-1.37	0.00	27.56	-160.83	-177.75
north :	s032	34	4.70	-110	58.40	5380.0	az	979153.97	979655.09	1.07	-168.38	-1.33	0.00	4.78	-163.85	-178.99
north :	s033	34	6.08	-110	57.63	5179.0	az	979167.79	979657.02	0.86	-162.09	-1.31	0.00	-2.22	-164.76	-179.35
north :	s034	34	6.07	-110	56.44	5115.0	az	979169.35	979657.01	1.15	-160.08	-1.31	0.00	-6.66	-166.90	-181.29
north :	s035	33	42.74	-111	1.69	2660.0	az	979307.91	979624.48	1.60	-83.25	-0.88	0.00	-66.38	-148.91	-156.32
north :	s036	33	44.28	-111	1.54	2933.0	az	979295.07	979626.62	2.03	-91.79	-0.94	0.00	-55.69	-146.40	-154.55
north :	s037	33	45.33	-111	1.98	3140.0	az	979281.27	979627.80	2.26	-98.27	-0.99	0.00	-51.21	-148.21	-156.92
north :	s038	33	46.02	-111	1.81	3405.0	az	979267.80	979629.04	2.73	-106.57	-1.05	0.00	-41.01	-145.89	-155.31
north :	s039	33	46.90	-111	1.54	3740.0	az	979248.03	979630.27	4.33	-117.05	-1.11	0.00	-34.50	-148.33	-158.55
north :	s040	33	46.17	-111	2.92	3410.0	az	979269.02	979629.25	2.63	-106.72	-1.05	0.00	-39.52	-144.65	-154.09

Table 1.--Principal facts for gravity stations in the Sierra Ancha Wilderness, Salome Study Area, and vicinity, Gila County, Ariz. (continued).

STATION IDENTIFICATION		LOCATIONS						GRAVITY		CORRECTIONS				ANOMALIES	
		LATITUDE		LONGITUDE		ELE	ST							FREE AIR	COMPLETE-BOUGUER
proj	sta-ia	deg	min	deg	min	(in ft)		OBSERVED	THEORETICAL	TERRAIN	BOUGUER	CURV	SPECIAL		d1=2.45 d2=2.67
north :	s041	33	46.92	-111	3.53	4045.0	az	979235.11	979630.29	2.62	-126.60	-1.16	0.00	-14.77	-137.92 -151.15
north :	s042	33	43.22	-111	3.05	2670.0	az	979312.18	979625.14	1.54	-83.56	-0.88	0.00	-61.84	-144.74 -152.18
north :	s043	33	41.78	-111	3.38	2430.0	az	979324.44	979623.14	1.31	-76.05	-0.82	0.00	-70.15	-145.71 -152.49
north :	s044	33	43.80	-111	5.13	2470.0	az	979323.93	979625.95	1.98	-77.30	-0.83	0.00	-69.70	-145.85 -152.69
north :	s045	33	44.46	-111	7.15	2565.0	az	979319.79	979626.87	1.95	-80.28	-0.85	0.00	-65.83	-145.00 -152.11
north :	s046	33	45.60	-111	8.01	3263.0	az	979280.06	979628.73	2.91	-102.12	-1.02	0.00	-41.79	-142.01 -151.01
north :	s047	33	46.54	-111	8.75	3440.0	az	979271.79	979629.77	3.02	-107.66	-1.05	0.00	-34.45	-140.14 -149.63
north :	s048	33	46.36	-111	10.06	3055.0	az	979291.47	979629.52	2.65	-95.61	-0.97	0.00	-50.72	-144.65 -153.08
north :	s049	33	46.54	-111	11.40	2460.0	az	979322.18	979629.77	2.58	-76.99	-0.82	0.00	-76.21	-151.44 -158.20
north :	s050	33	47.08	-111	12.90	2425.0	az	979322.94	979630.52	1.63	-75.89	-0.82	0.00	-79.49	-154.57 -161.31
north :	s051	33	48.47	-111	10.86	2820.0	az	979305.60	979632.45	3.85	-88.26	-0.92	0.00	-61.62	-146.94 -154.60
north :	s052	33	47.68	-111	14.82	2208.0	az	979332.68	979631.35	1.95	-69.10	-0.76	0.00	-90.99	-158.91 -165.01
north :	s053	33	48.30	-111	12.75	2532.0	az	979318.90	979632.21	1.79	-79.24	-0.88	0.00	-75.17	-153.47 -160.50
north :	s054	33	49.40	-111	16.63	2232.0	az	979333.98	979633.74	2.11	-69.85	-0.76	0.00	-89.83	-158.33 -164.49
north :	s055	33	51.33	-111	15.85	2480.0	az	979326.15	979636.48	1.88	-77.62	-0.83	0.00	-77.03	-153.60 -160.47
north :	s056	33	52.40	-111	17.55	2426.0	az	979330.39	979637.92	1.85	-75.93	-0.82	0.00	-79.36	-154.25 -160.97
north :	s057	33	38.85	-110	53.58	4355.0	az	979186.36	979619.07	17.50	-136.30	-1.21	0.00	-23.15	-143.17 -153.94
north :	s058	33	42.91	-110	54.13	4387.0	az	979186.40	979624.71	6.08	-137.30	-1.22	0.00	-25.75	-158.18 -170.07
north :	s059	33	45.85	-110	56.03	6874.0	az	979035.37	979628.80	25.13	-215.13	-1.39	0.00	52.90	-138.49 -155.68
north :	s060	33	45.76	-110	54.16	5528.0	az	979129.76	979628.68	11.05	-173.01	-1.34	0.00	20.90	-142.40 -157.06
north :	s061	33	47.60	-110	51.61	5555.0	az	979129.54	979631.24	12.29	-173.85	-1.35	0.00	20.66	-142.25 -156.88
north :	s062	33	50.76	-110	50.62	4955.0	az	979168.26	979635.64	7.47	-155.08	-1.29	0.00	-1.42	-150.32 -163.69
north :	s063	33	50.77	-110	53.31	6271.0	az	979075.09	979635.66	18.11	-196.26	-1.33	0.00	29.10	-150.43 -166.55
north :	s064	33	52.80	-110	56.60	7523.0	az	979005.91	979638.48	18.23	-235.45	-1.38	0.00	74.75	-143.84 -163.47
north :	s065	33	53.13	-110	52.48	4860.0	az	979164.62	979638.95	3.05	-152.10	-1.28	0.00	-17.30	-167.63 -181.13
north :	s066	33	54.25	-110	51.10	6113.0	az	979096.40	979640.51	10.92	-191.32	-1.38	0.00	30.70	-151.07 -167.40
north :	s067	33	56.22	-110	52.08	6010.0	az	979105.27	979643.25	5.83	-188.09	-1.37	0.00	27.15	-156.49 -172.98
north :	s068	33	58.25	-110	51.06	5750.0	az	979128.50	979646.09	3.11	-179.96	-1.36	0.00	23.10	-155.10 -171.10
north :	s069	33	58.07	-110	52.74	5334.0	az	979153.27	979645.84	3.60	-166.94	-1.33	0.00	9.03	-155.64 -170.43
north :	s071	33	57.30	-110	54.96	5520.0	az	979136.99	979644.76	5.46	-172.76	-1.34	0.00	11.30	-157.34 -172.48
north :	s072	33	46.58	-111	6.04	5021.0	az	979159.84	979629.82	17.34	-157.14	-1.30	0.00	2.19	-138.90 -151.57
north :	s073	33	48.22	-111	6.86	5286.0	az	979153.27	979632.10	15.87	-165.43	-1.32	0.00	18.25	-132.65 -146.20
north :	s074	33	49.40	-111	6.96	5708.0	az	979119.78	979633.74	12.68	-178.64	-1.36	0.00	23.78	-144.54 -159.56
north :	s075	33	50.10	-111	6.42	5515.0	az	979139.02	979634.72	10.57	-172.60	-1.34	0.00	22.90	-140.47 -155.14
north :	s076	33	48.83	-111	5.46	4234.0	az	979217.47	979632.95	6.08	-132.51	-1.19	0.00	-17.30	-144.92 -156.38
north :	s077	33	50.14	-111	3.72	4643.0	az	979190.77	979634.77	4.33	-145.31	-1.25	0.00	-7.37	-149.60 -162.38
north :	s078	33	50.66	-111	2.79	5162.0	az	979157.40	979635.50	7.18	-161.55	-1.31	0.00	7.32	-148.37 -162.35
north :	s079	33	49.27	-111	0.63	7310.0	az	979014.23	979633.56	21.22	-228.78	-1.38	0.00	67.98	-140.96 -159.72
north :	s080	33	51.61	-111	0.54	6254.0	az	979091.26	979636.82	12.96	-195.73	-1.38	0.00	42.50	-141.66 -158.20

Table 1.--Principal facts for gravity stations in the Sierra Ancha Wilderness, Salome Study Area, and vicinity, Gila County, Ariz. (continued).

STATION IDENTIFICATION proj	sta-id	LOCATIONS LATITUDE deg	min	LONGITUDE deg	min	ELE (in ft)	ST	GRAVITY OBSERVED	THEORETICAL	CORRECTIONS TERRAIN	BOUGUER	CURV	SPECIAL	ANOMALIES FREE AIR	COMPLETE-BOUGUER d1=2.45	d2=2.67
north :	s081	33	53.20	-111	0.94	6192.0	az	979098.20	979039.04	8.41	-193.79	-1.39	0.00	37.40	-149.36	-166.13
north :	s082	33	55.96	-111	1.95	5770.0	az	979131.68	979042.89	2.63	-180.58	-1.36	0.00	31.36	-147.95	-164.05
north :	s083	33	58.29	-111	1.25	6140.0	az	979102.75	979046.14	3.76	-192.16	-1.38	0.00	33.95	-155.82	-172.87
north :	s084	33	59.98	-111	0.98	5441.0	az	979142.80	979048.50	2.03	-170.29	-1.34	0.00	5.94	-163.65	-178.88
north :	s085	33	52.62	-111	3.37	6051.0	az	979105.43	979038.23	10.69	-189.38	-1.38	0.00	36.18	-143.88	-160.05
north :	s086	33	50.58	-111	5.27	4134.0	az	979229.13	979035.39	3.92	-129.38	-1.18	0.00	-17.48	-144.12	-155.49
north :	s087	33	51.54	-111	4.79	4618.0	az	979198.00	979036.73	3.82	-144.53	-1.25	0.00	-4.45	-146.41	-159.15
north :	s088	33	50.45	-111	8.24	5444.0	az	979137.30	979035.21	14.53	-170.38	-1.34	0.00	14.02	-143.17	-157.29
north :	s089	33	49.52	-111	8.44	5337.0	az	979144.94	979033.91	9.77	-167.03	-1.33	0.00	12.90	-145.69	-159.93
north :	s090	33	51.78	-111	9.87	5520.0	az	979136.31	979037.06	11.41	-172.76	-1.34	0.00	18.32	-144.37	-159.98
north :	s091	33	48.13	-111	9.11	5025.0	az	979167.18	979031.98	11.72	-157.27	-1.30	0.00	7.74	-139.10	-152.29
north :	s092	33	47.43	-111	8.00	5373.0	az	979140.99	979031.00	17.53	-168.16	-1.33	0.00	15.24	-136.72	-150.36
north :	s093	33	51.09	-110	48.38	5029.0	az	979166.89	979036.10	2.80	-157.39	-1.30	0.00	3.71	-152.18	-166.18
north :	s094	33	52.26	-110	48.72	5716.0	az	979127.65	979037.73	2.94	-178.89	-1.36	0.00	27.41	-149.90	-165.82
north :	s095	33	54.60	-110	48.56	5400.0	az	979153.83	979041.27	1.79	-169.00	-1.33	0.00	20.35	-148.20	-163.33
north :	s096	33	56.17	-110	48.06	5240.0	az	979165.81	979043.18	0.93	-164.09	-1.32	0.00	15.38	-149.01	-163.77
north :	s097	33	57.70	-110	47.40	5083.0	az	979176.88	979045.32	0.95	-159.08	-1.30	0.00	9.56	-149.87	-164.19
north :	s098	33	58.61	-110	48.44	5334.0	az	979162.11	979046.59	0.95	-166.94	-1.33	0.00	17.11	-150.21	-165.24
north :	s099	33	59.48	-110	49.34	5343.0	az	979158.68	979047.80	0.94	-167.22	-1.33	0.00	13.31	-154.30	-169.35
north :	s100	34	0.84	-110	49.25	5729.0	az	979136.19	979049.70	2.72	-179.30	-1.35	0.00	25.20	-152.74	-168.72
north :	s101	34	1.86	-110	49.04	5424.0	az	979156.72	979051.13	0.94	-169.75	-1.33	0.00	15.64	-159.51	-169.79
north :	s102	34	0.89	-110	49.36	5327.0	az	979155.45	979049.77	2.54	-166.72	-1.33	0.00	6.61	-158.89	-173.75
north :	s103	34	0.90	-110	53.21	4560.0	az	979197.75	979049.78	2.09	-142.71	-1.24	0.00	-23.21	-165.07	-177.81
north :	s104	34	2.43	-110	53.70	4700.0	az	979192.26	979051.92	2.34	-147.09	-1.26	0.00	-17.68	-163.69	-176.80
north :	s105	34	4.28	-110	54.46	4943.0	az	979178.99	979054.51	1.38	-154.70	-1.29	0.00	-10.68	-165.30	-179.18
north :	s106	33	59.47	-110	56.90	6103.0	az	979107.39	979047.79	3.50	-191.00	-1.38	0.00	33.47	-155.42	-172.38
north :	s107	33	52.72	-111	16.78	2518.0	az	979327.29	979036.38	1.78	-78.81	-0.84	0.00	-74.25	-152.12	-159.11
north :	s108	33	48.38	-111	3.39	4733.0	az	979190.84	979032.33	3.69	-148.13	-1.26	0.00	3.61	-142.09	-155.17
north :	s109	33	45.44	-111	4.62	3495.0	az	979265.82	979028.23	4.22	-109.38	-1.06	0.00	-33.71	-139.94	-149.47
north :	s913	33	48.25	-110	50.49	3020.0	az	979277.54	979032.14	10.57	-94.52	-0.96	0.00	-70.57	-155.48	-163.10
north :	s110	33	49.23	-110	51.04	3460.0	az	979259.51	979033.51	6.86	-108.29	-1.06	0.00	-48.59	-151.07	-160.27
north :	s111	33	49.30	-110	51.14	3530.0	az	979249.10	979033.61	7.29	-110.48	-1.07	0.00	-52.45	-156.72	-166.08
north :	s112	33	50.00	-110	51.76	3620.0	az	979240.04	979034.58	8.78	-113.29	-1.09	0.00	-54.09	-159.69	-169.17
north :	s113	33	50.36	-110	51.82	3620.0	az	979230.74	979035.09	7.26	-119.55	-1.12	0.00	-45.08	-158.50	-168.69
north :	s114	33	50.78	-110	52.40	4060.0	az	979216.33	979035.66	8.77	-127.07	-1.17	0.00	-37.52	-156.98	-167.70
north :	s115	33	51.05	-110	52.47	4100.0	az	979214.18	979036.05	8.15	-128.32	-1.17	0.00	-36.26	-157.62	-168.52
north :	s116	33	51.82	-110	52.45	3900.0	az	979223.36	979037.12	6.66	-122.06	-1.14	0.00	-46.98	-163.51	-173.98
north :	s117	33	52.42	-110	53.52	4150.0	az	979213.11	979037.95	7.25	-129.88	-1.18	0.00	-38.56	-158.37	-169.49
north :	s118	33	53.23	-110	53.88	4190.0	az	979211.79	979039.09	5.87	-131.13	-1.19	0.00	-33.25	-159.70	-171.05
north :	s119	33	54.10	-110	54.32	4260.0	az	979205.23	979040.30	5.70	-133.32	-1.20	0.00	-34.44	-163.26	-174.83

Table 1.--Principal facts for gravity stations in the Sierra Ancha Wilderness, Salome Study Area, and vicinity, Gila County, Ariz. (continued)

STATION IDENTIFICATION		LOCATIONS						GRAVITY		CORRECTIONS				ANOMALIES	
		LATITUDE		LUNGITUDE		ELE	ST	OBSERVED	THEURETICAL	TERRAIN	BOUGUER	CURV	SPECIAL	FREE AIR	COMPLETE-BOUGUER
proj	sta-id	deg	min	deg	min	(in ft)									d1=2.45 d2=2.67
north :	s120	33	55.36	-110	54.79	4200.0	az	979210.52	979642.05	5.07	-131.45	-1.19	0.00	-36.55	-164.12 -175.57
north :	s121	33	56.22	-110	55.64	4470.0	az	979196.86	979643.25	4.85	-139.90	-1.23	0.00	-26.03	-162.30 -174.53
north :	s122	33	50.83	-111	14.73	2520.0	az	979323.94	979635.73	2.39	-78.87	-0.84	0.00	-74.78	-152.09 -159.04
north :	s123	33	54.15	-111	13.78	3400.0	az	979277.11	979640.37	2.06	-106.41	-1.04	0.00	-43.49	-148.89 -158.35
north :	s124	33	53.33	-111	12.89	3440.0	az	979271.70	979639.22	3.06	-107.66	-1.05	0.00	-43.99	-149.65 -159.14
north :	s125	33	53.04	-111	10.53	3660.0	az	979247.53	979638.82	3.67	-120.81	-1.13	0.00	-28.27	-146.54 -157.16
north :	s126	33	52.92	-111	8.76	4315.0	az	979221.54	979638.65	2.16	-135.05	-1.21	0.00	-11.32	-145.41 -157.45
north :	s127	33	53.75	-111	6.96	4590.0	az	979205.21	979639.80	3.03	-143.65	-1.24	0.00	-2.95	-144.21 -156.90
north :	s128	33	53.82	-111	5.74	5805.0	az	979124.96	979639.91	5.55	-184.15	-1.37	0.00	38.44	-141.56 -157.72
north :	s129	33	54.33	-111	4.90	5660.0	az	979141.05	979640.62	3.06	-177.14	-1.35	0.00	32.66	-142.77 -158.52
north :	s130	33	53.58	-111	6.64	4840.0	az	979188.78	979639.57	3.34	-151.48	-1.28	0.00	4.36	-145.05 -158.47
north :	s131	33	53.89	-111	6.97	4510.0	az	979209.08	979640.00	4.90	-141.15	-1.23	0.00	-6.80	-144.28 -156.63
north :	s132	33	59.80	-110	58.65	5930.0	az	979120.08	979648.25	2.00	-185.59	-1.37	0.00	29.44	-155.52 -172.13
north :	s133	34	0.64	-111	0.63	5475.0	az	979147.75	979649.42	1.45	-171.35	-1.34	0.00	13.17	-158.07 -173.45
north :	s134	34	0.53	-111	1.91	4890.0	az	979183.96	979649.27	2.39	-153.04	-1.28	0.00	-5.46	-157.39 -171.03
north :	s135	34	0.58	-111	3.36	5447.0	az	979152.17	979649.34	1.87	-170.47	-1.34	0.00	15.04	-154.90 -170.16
north :	s136	34	1.04	-111	3.82	5370.0	az	979158.53	979649.98	1.58	-168.06	-1.33	0.00	13.52	-154.29 -169.36
north :	s137	33	59.85	-111	3.87	4950.0	az	979181.45	979648.32	2.42	-154.92	-1.29	0.00	-1.38	-155.16 -168.97
north :	s138	33	58.77	-111	3.72	5035.0	az	979175.38	979646.81	3.40	-157.58	-1.30	0.00	2.05	-153.42 -167.38
north :	s139	33	57.75	-111	3.39	5200.0	az	979163.88	979645.39	3.15	-162.78	-1.31	0.00	7.49	-153.43 -167.87
north :	s140	33	57.12	-111	2.55	5579.0	az	979133.51	979644.51	1.99	-177.73	-1.35	0.00	23.02	-154.08 -169.98
north :	s141	33	56.22	-111	2.65	5593.0	az	979141.85	979643.25	2.78	-175.04	-1.35	0.00	24.53	-149.08 -164.67
north :	s142	33	55.54	-111	2.88	5332.0	aa	979147.95	979642.30	1.71	-166.87	-1.33	0.00	7.05	-159.45 -174.40
north :	s143	33	56.70	-111	1.01	5869.0	az	979121.29	979643.92	2.24	-183.68	-1.37	0.00	29.24	-153.57 -169.98
north :	s144	33	57.40	-110	59.33	6160.0	az	979111.01	979644.90	2.70	-192.79	-1.38	0.00	45.34	-146.13 -163.33
north :	s145	33	51.80	-110	56.68	5620.0	az	979134.98	979637.09	6.18	-175.89	-1.35	0.00	26.37	-144.69 -160.05
north :	s147	33	45.73	-110	52.82	5040.0	AZ	979163.06	979628.63	5.07	-157.74	-1.30	0.00	8.38	-145.58 -159.41
north :	s148	33	45.24	-110	52.18	4820.0	AZ	979174.34	979627.95	3.98	-150.85	-1.27	0.00	-0.34	-148.48 -161.78
north :	s149	33	44.69	-110	51.35	4660.0	AZ	979181.54	979627.19	5.78	-145.84	-1.25	0.00	-7.42	-148.74 -161.43
north :	s150	33	44.10	-110	50.85	4405.0	AZ	979196.69	979626.37	5.59	-137.86	-1.22	0.00	-15.42	-148.92 -160.90
north :	s151	33	43.32	-110	50.40	3700.0	AZ	979232.96	979625.28	2.76	-115.80	-1.10	0.00	-44.35	-158.49 -168.74
north :	s152	33	42.96	-110	50.20	3580.0	AZ	979248.93	979624.78	2.46	-112.04	-1.08	0.00	-39.16	-149.83 -159.76
north :	s154	33	48.91	-110	54.42	7560.0	AZ	979000.81	979633.06	14.83	-236.60	-1.37	0.00	78.55	-144.60 -164.64
north :	s155	33	48.90	-110	54.30	7400.0	AZ	979012.66	979633.05	13.43	-231.60	-1.38	0.00	75.38	-144.17 -163.88
north :	s156	33	39.45	-110	57.55	2330.0	az	979312.65	979619.91	1.39	-72.92	-0.79	0.00	-88.10	-160.42 -166.92
north :	s157	33	40.75	-110	58.55	2404.0	az	979313.91	979621.71	1.52	-75.24	-0.81	0.00	-81.69	-156.21 -162.90
north :	s158	33	43.20	-110	59.50	2882.0	az	979294.37	979625.12	2.22	-90.20	-0.93	0.00	-59.69	-148.60 -156.59
north :	s159	33	43.30	-110	58.00	3339.0	az	979267.14	979625.26	2.83	-104.50	-1.03	0.00	-44.08	-146.79 -156.01

Table 1.--Principal facts for gravity stations in the Sierra Ancha Wilderness, Salome Study Area, and vicinity, Gila County, Ariz .(continued)

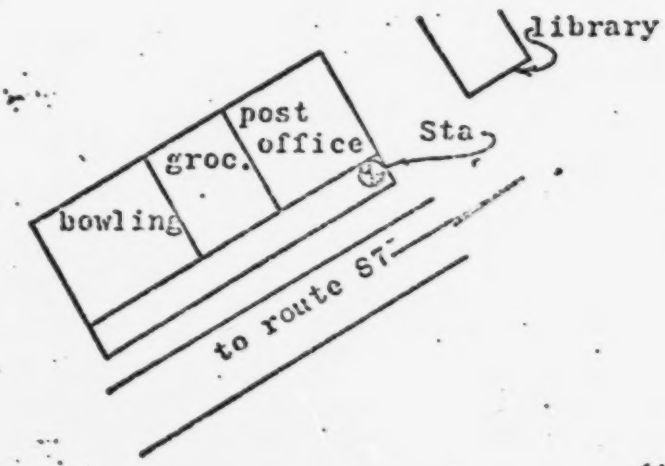
STATION IDENTIFICATION proj	sta-id	LOCATIONS LATITUDE deg	min	LONGITUDE deg	min	ELE (in ft)	ST	GRAVITY OBSERVED	THEURETICAL	CORRECTIONS TERRAIN	BOUGUER	CURV	SPECIAL	ANOMALIES FREE AIR	COMPLETE-BOUGUER d1=2.45	d2=2.67
north :	s160	33	43.90	-110	57.25	3840.0	az	979236.29	979626.09	3.71	-120.18	-1.13	0.00	-28.66	-146.27	-156.83
north :	s161	33	44.95	-110	57.80	4302.0	az	979207.74	979627.55	4.79	-134.64	-1.20	0.00	-15.23	-146.29	-158.06
north :	s162	33	46.75	-110	57.80	4578.0	az	979182.29	979630.05	8.66	-146.41	-1.26	0.00	-7.85	-146.85	-159.33
north :	s163	33	47.20	-110	58.20	4720.0	az	979160.66	979630.68	6.57	-147.72	-1.26	0.00	-6.15	-148.56	-161.35
north :	s164	33	47.80	-110	58.85	5500.0	az	979137.40	979631.52	5.34	-172.13	-1.34	0.00	23.07	-145.06	-160.16
north :	s165	33	49.30	-110	58.75	5640.0	az	979128.55	979633.61	4.74	-176.51	-1.35	0.00	25.29	-147.83	-163.38
north :	s166	33	50.02	-110	58.50	5391.0	az	979137.19	979634.61	5.07	-168.72	-1.33	0.00	9.53	-155.45	-170.27
north :	s167	33	50.10	-110	58.36	5445.0	az	979140.03	979634.72	5.29	-170.41	-1.34	0.00	17.33	-149.13	-164.08
north :	s168	33	50.72	-110	58.00	5404.0	az	979143.74	979635.59	4.92	-169.13	-1.33	0.00	16.33	-149.22	-164.08
north :	s169	33	48.60	-110	58.50	5961.0	az	979110.82	979632.91	5.16	-186.56	-1.37	0.00	38.43	-144.34	-160.75
north :	s170	33	47.77	-110	58.03	5079.0	az	979160.45	979631.48	7.50	-158.96	-1.30	0.00	6.60	-146.17	-159.88
north :	s171	33	46.48	-110	58.03	4707.0	az	979182.06	979629.68	6.57	-147.31	-1.26	0.00	-4.97	-146.97	-159.73
north :	s172	33	45.80	-110	58.25	4682.0	az	979184.11	979628.73	5.16	-146.53	-1.26	0.00	-4.33	-146.96	-159.77
north :	s173	33	45.26	-110	58.05	4420.0	az	979196.78	979627.98	4.97	-138.33	-1.22	0.00	-15.53	-150.11	-162.20
north :	s174	33	41.50	-110	54.40	4498.0	az	979185.81	979622.79	13.78	-140.77	-1.23	0.00	-13.94	-142.16	-153.68
north :	s175	33	41.90	-110	55.10	4374.0	az	979195.75	979623.31	8.38	-136.89	-1.21	0.00	-16.21	-145.94	-157.59
north :	s176	33	41.25	-110	56.10	3155.0	az	979276.42	979622.41	2.04	-98.74	-0.99	0.00	-49.25	-146.95	-155.72
north :	s177	33	41.90	-110	57.40	2745.0	az	979297.85	979623.31	2.14	-85.91	-0.90	0.00	-67.26	-151.95	-159.55
north :	s178	33	43.76	-110	56.60	4238.0	az	979213.93	979625.90	6.01	-132.64	-1.19	0.00	-13.41	-141.23	-152.71
north :	s179	33	45.05	-110	54.50	4500.0	az	979196.23	979627.69	3.20	-140.84	-1.23	0.00	-8.27	-147.13	-159.60
north :	s180	33	45.60	-110	56.50	6350.0	az	979081.08	979628.45	15.42	-198.73	-1.39	0.00	49.71	-134.99	-151.57
north :	s181	33	45.95	-110	59.40	4800.0	az	979170.15	979628.95	14.47	-150.22	-1.27	0.00	-7.40	-144.43	-156.73
north :	s182	33	46.70	-110	59.00	4800.0	az	979180.12	979629.98	4.26	-150.22	-1.27	0.00	1.52	-145.72	-158.98
north :	s183	33	50.48	-111	0.03	6980.0	az	979039.86	979635.25	15.89	-218.45	-1.39	0.00	60.90	-143.05	-161.36
north :	s184	33	48.80	-111	0.45	7060.0	az	979029.37	979632.91	20.48	-220.96	-1.39	0.00	60.27	-141.59	-159.72
north :	s185	33	48.50	-111	0.20	6700.0	az	979056.79	979632.49	16.23	-209.69	-1.39	0.00	54.28	-140.57	-158.07
north :	s186	33	49.35	-110	59.50	6640.0	az	979067.93	979633.67	10.74	-207.81	-1.39	0.00	58.59	-139.87	-157.69
north :	s187	33	48.52	-110	59.75	6663.0	az	979066.16	979632.52	15.62	-208.53	-1.39	0.00	60.15	-134.16	-151.61
north :	s188	33	45.25	-110	58.60	4605.0	az	979182.70	979627.97	12.24	-144.12	-1.25	0.00	-12.21	-145.34	-157.29
north :	s189	33	44.30	-110	59.25	3561.0	az	979251.55	979626.65	4.21	-111.45	-1.08	0.00	-40.19	-148.51	-158.23
north :	s190	33	49.20	-111	3.00	4680.0	az	979190.06	979633.47	3.06	-146.47	-1.26	0.00	-3.30	-147.96	-160.95
north :	s191	33	43.50	-110	52.60	3661.0	az	979227.61	979625.53	5.15	-123.97	-1.15	0.00	-25.41	-145.38	-156.15
north :	s192	33	42.50	-110	52.12	3040.0	az	979282.37	979624.14	2.33	-95.14	-0.97	0.00	-55.86	-149.64	-158.06
north :	s193	33	45.45	-111	6.95	3725.0	az	979247.16	979626.25	11.08	-116.58	-1.11	0.00	-30.76	-137.86	-146.93

GRAVITY BASE STATION

LATITUDE: 34° 13.9'N (1)	STATION DESIGNATION: PAYSON
LONGITUDE: 111° 20.07'W (1)	COUNTRY/STATE: USA/Arizona
ELEVATION: 1493.5 METERS (1)	ADOPTED GRAVITY VALUE: g= 979211.53 mgals
REFERENCE CODE NUMBERS: ACIC 3203-1	ESTIMATED ACCURACY: ± 0.1 mgals; DATE (MONTH/YEAR): 9/69

DESCRIPTION AND/OR SKETCH

Station site is located at post office, on SE corner of porch, and 70 ft. W of public library. (1)



(1)

REFERENCE SOURCE

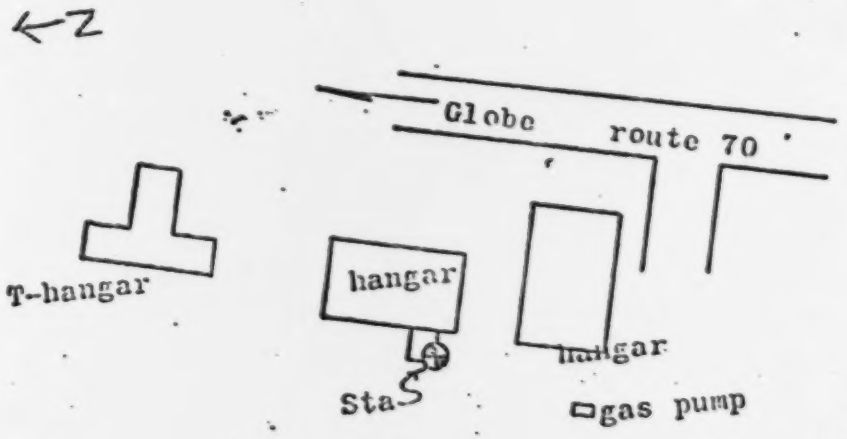
(1) 03035

GRAVITY BASE STATION

LATITUDE 33° 16.95'N (1)	STATION DESIGNATION GLOBE
LONGITUDE 110° 33.2'W (1)	COUNTRY/STATE USA/Arizona
ELEVATION 983.9 METERS (1)	ADOPTED GRAVITY VALUE g= 979254.98 mgals
REFERENCE CODE NUMBERS: ACIC 3210-1	ESTIMATED ACCURACY ± 0.1 mgals
	DATE MONTH/YEAR 9/69

DESCRIPTION AND/OR SKETCH

Station site is located at Globe Airport, on SE corner of concrete apron, S of long yellow metal hangar. (1)



(1)

REFERENCE SOURCE

(1) 03035

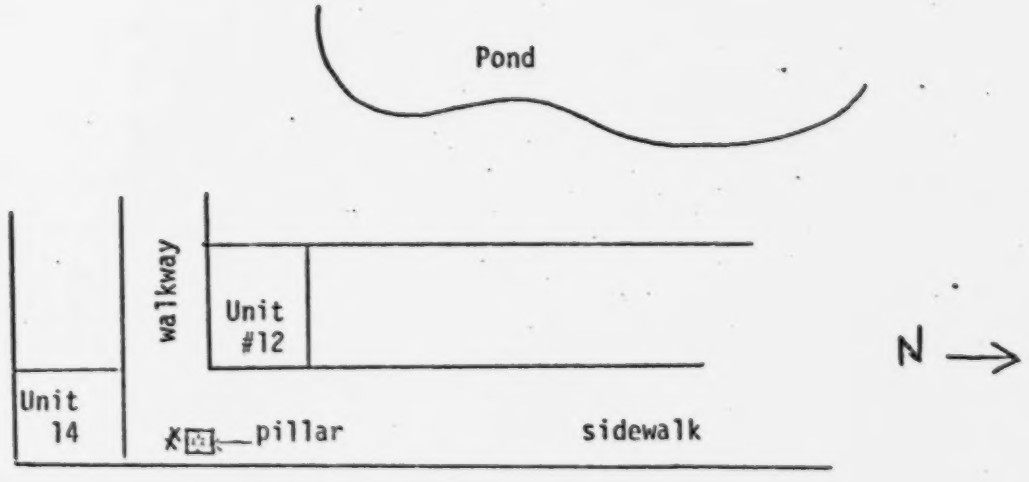
U.S. GEOLOGICAL SURVEY
GRAVITY BASE STATION

STATE/COUNTRY	STATION DESIGNATION	OBSERVED GRAVITY
ARIZ/USA	Roosevelt Lake Resort	979 324.29
NEAREST TOWN	**LONGITUDE**	**LATITUDE**
Roosevelt, Az	110°59.90'W	33°36.60' N
ELEVATION	**TOPOGRAPHIC MAP(S)**	
685.8 m	Rockinstraw Mtn.	

DATE	OBSERVER	METER	REFERENCE STATION	REFERENCE VALUE
3/19/78	D. Wilson	G-159	ACIC 3210-I Globe, Arizona	979 254.98

DESCRIPTION/SKETCH

Base is located at Roosevelt Lake Resort on the east side of a brick pillar, behind unit #14, in front of unit #12.



MDK 12/1/78

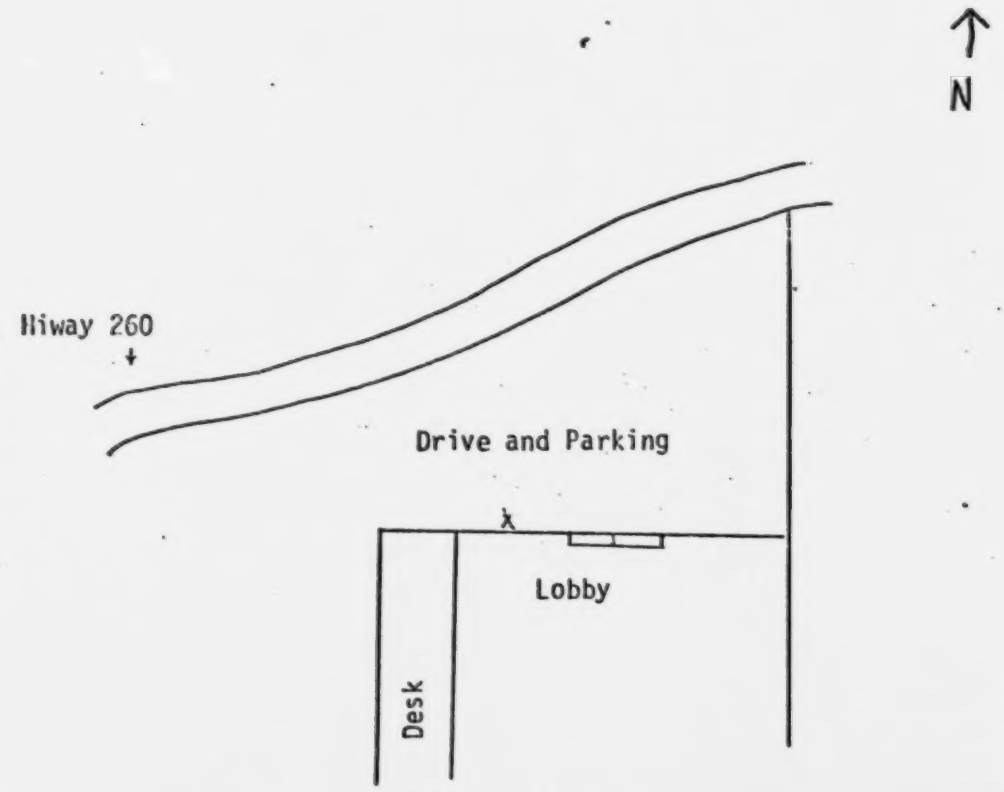
U.S. GEOLOGICAL SURVEY
GRAVITY BASE STATION

STATE/COUNTRY	STATION DESIGNATION	OBSERVED GRAVITY
Arizona/USA	Kohl's Ranch	979 170.38
NEAREST TOWN	LONGITUDE	LATITUDE
Payson, Arizona	111°05.65' W.	34°19.45' N.
ELEVATION	TOPOGRAPHIC MAP(S)	
1627.6 m	Promontory Butte, Az	

DATE	OBSERVER	METER	REFERENCE STATION	REFERENCE VALUE
11/9/78	D. Wilson	W-177	ACIC 3203-1 Payson, AZ	979 211.53

DESCRIPTION/SKETCH

Base is at main entrance to Kohl's Ranch, on sidewalk 3' west of glass doors.



MDK 12/1/78

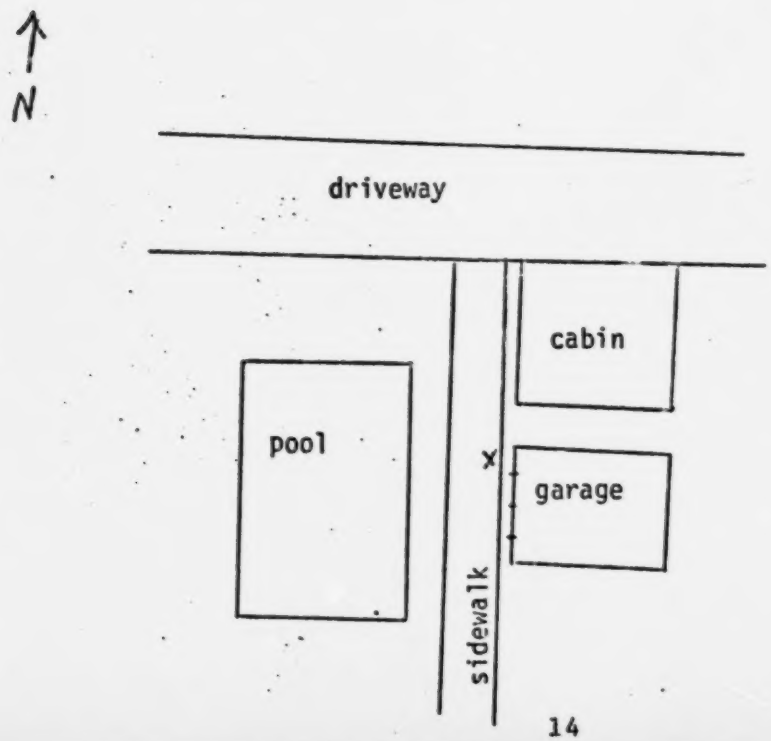
U.S. GEOLOGICAL SURVEY
GRAVITY BASE STATION

STATE/COUNTRY	STATION DESIGNATION	OBSERVED GRAVITY
Arizona/USA	Mountain Shadows	979 207.50
NEAREST TOWN	**LONGITUDE**	**LATITUDE**
Payson, Arizona	111°19.45' N.	34° 14.00' W
ELEVATION	**TOPOGRAPHIC MAP(S)**	
1463.2 m	Payson South	

DATE	OBSERVER	METER	REFERENCE STATION	REFERENCE VALUE
3/20/79	D. Wilson	W-177	ACIC 3203-1 Payson,AZ	979 211.53

DESCRIPTION/SKETCH

Base is at Mountain Shadows Leisure Villa trailer park in Payson, Az. The base is located on the sidewalk at the east side of the swimming pool at the NW corner of a garage/storage building.



MDK 12/1/78

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International Association of Geodesy, 1967, Geodetic Reference System, 1967, International Association of Geodesy Special Publication 3, 74 p.